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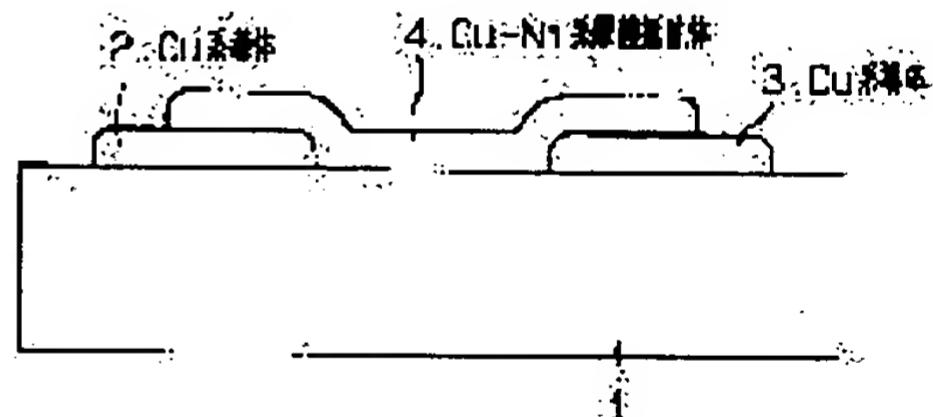
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## (54) RESISTOR PASTE, FORMATION METHOD FOR THICK-FILM RESISTOR, AND MANUFACTURE OF THICK-FILM SUBSTRATE

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a thick-film resistor of small temperature coefficient resistance(TRC), without using a material which adversely affects the environment such as lead.

**SOLUTION:** On a ceramic substrate 1, where Cu group conductors 2 and 3 are arranged, this resistor paste for which conductive powder constituting of a mixed power (Cu/Ni=60/40 to 80/20) of copper powder and nickel powder, the glass powder of 3-20 pts.wt. to the 100 pts.wt. of the conductive powder and the copper oxide powder of 1-10 pts.wt. are disposed to a vehicle, composed of organic resin and a solvent with the ratio of conductive components of 75-90 wt.% is printed. Then, it is calcined in a nitrogen atmosphere, and a thick film substrate is manufactured. For the resistor paste, the main component of glass is composed of ZnO or BaO or both and a copper oxide consists of Cu<sub>2</sub>O or CuO or the mixture of Cu<sub>2</sub>O and CuO. The grain diameter of the copper powder is 0.1-2 μm, the grain diameter of the nickel powder is 0.1 μm-2 μm and the grain diameter of the copper oxide is 1 μm-10 μm.



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